

WHAT IS CLAIMED IS:

1. A method of generating a scene description from a set of words, comprising:
 - performing a linguistic analysis on the set of words to generate a structure representative of the semantic relations of the set of words;
 - converting said structure to a set of description elements, wherein description elements are representative of objects to be depicted in a scene and relationships between objects;
 - assigning a set of depicators to each description element, wherein depicators comprise:
 - a reference to an object to be modified,
 - parameters used in modifying the object, and
 - a procedure for the modification of the object; and
 - generating said scene description by execution of said procedures for the modification of the objects.
2. The method of claim 1, wherein the linguistic analysis includes tagging the set of words with grammatical parts of speech.
3. The method of claim 1, wherein the linguistic analysis includes parsing the set of words into a parse tree structure representative of the structure of the set of words.

4. The method of claim 1, wherein the structure representative of the semantic relations of the set of words is a dependency structure, wherein the dependency structure indicates words that a given word is dependent on and indicates the words that depend on the given word.

5. The method of claim 1, wherein each description element is classified as belonging to a description element type.

6. The method of claim 5, wherein the description element type has an object to which the description element refers.

7. The method of claim 1, wherein at least one description element is are modified to resolve conflicts between description elements.

8. The method of claim 1, wherein at least one description element is modified to add constraints to description elements.

9. The method of claim 1, wherein at least one depictor is modified to resolve conflicts between depictors.

10. The method of claim 1, wherein at least one depictor is modified to add constraints to depictors.

1 11. A machine-readable medium having stored thereon a plurality of executable instructions,
2 the plurality of instructions comprising instructions to:
3 perform a linguistic analysis on a set of words to generate a structure representative of the
4 semantic relations of the set of words;
5 convert said structure to a set of description elements, wherein description elements are
6 representative of objects to be depicted in a scene and relationships between objects;
7 assign a set of depictors to each description element, wherein depictors comprise:
8 a reference to an object to be modified,
9 parameters used in modifying the object, and
10 a procedure for the modification of the object; and
11 generate a scene description by execution of said procedures for the modification of the
12 objects.

1 12. The machine-readable medium of claim 11, wherein the linguistic analysis includes
2 tagging the set of words with grammatical parts of speech.

1 13. The machine-readable medium of claim 11, wherein the linguistic analysis includes
2 parsing the set of words into a parse tree structure representative of the structure of the set of
3 words.

1 14. The machine-readable medium of claim 11, wherein the structure representative of the
2 semantic relations of the set of words is a dependency structure, wherein the dependency
3 structure indicates words that a given word is dependent on and indicates the words that depend
4 on the given word.

1 15. The machine-readable medium of claim 11, wherein each description element is
2 classified as belonging to a description element type.

1 16. The machine-readable medium of claim 15, wherein the description element type has an
2 object to which the description element refers.

1 17. The machine-readable medium of claim 11, wherein at least one description element is
2 modified to resolve conflicts between description elements.

1 18. The machine-readable medium of claim 11, wherein at least one description element is
2 modified to add constraints to description elements.

1 19. The machine-readable medium of claim 11, wherein at least one depictor is modified to
2 resolve conflicts between depictors.

20. The machine-readable medium of claim 11, wherein at least one depictor is modified to add constraints to depictors.

21. A method of generating a low-level scene description from a set of words, comprising:
tagging the set of words with parts of speech;
parsing said tagged set of words into a parse tree structure representative of the structure of the set of words;
converting said parse tree into a structure representative of the semantic relations of the set of words;
converting said structure into a high-level scene description, wherein said high-level scene description includes at least one description element;
assigning a set of depictors to each description element, wherein depictors comprise:
a reference to an object to be modified,
parameters used in modifying the object,
a procedure for the modification of the object; and
generating said low-level scene description by execution of said procedures for the modification of the objects.

22. The method of claim 21, wherein the structure representative of the semantic relations of the set of words is a dependency structure, wherein the dependency structure indicates words that

3 a given word is dependent on and indicates the words that depend on the given word.

1 23. The method of claim 21, wherein each description element is classified as belonging to a
2 description element type.

1 24. The method of claim 23, wherein the description element type has an object to which the
2 description element refers.

1 25. The method of claim 21, wherein at least one description element is modified to resolve
2 conflicts between description elements.

1 26. The method of claim 21, wherein at least one description element is modified to add
2 constraints to description elements.

1 27. The method of claim 21, wherein at least one depictor is modified to resolve conflicts
2 between depictors.

1 28. The method of claim 21, wherein at least one depictor is modified to add constraints to
2 depictors.

29. A machine-readable medium having stored thereon a plurality of executable instructions, the plurality of instructions comprising instructions to:

tag a set of words with parts of speech;

parse said tagged set of words into a parse tree structure representative of the structure of the set of words;

convert said parse tree into a structure representative of the semantic relations of the set of words;

convert said structure into a high-level scene description, wherein said high-level scene description includes at least one description element;

assign a set of depictors to each description element, wherein depictors comprise:

a reference to an object to be modified,

parameters used in modifying the object,

a procedure for the modification of the object; and

generate a scene description by execution of said procedures for the modification of the objects.

30. The machine-readable medium of claim 29, wherein the structure representative of the semantic relations of the set of words is a dependency structure, wherein the dependency structure indicates words that a given word is dependent on and indicates the words that depend on the given word.

1 31. The machine-readable medium of claim 29, wherein each description element is
2 classified as belonging to a description element type.

1 32. The machine-readable medium of claim 31, wherein the description element type has an
2 object to which the description element refers.

1 33. The machine-readable medium of claim 29, wherein at least one description element is
2 modified to resolve conflicts between description elements.

1 34. The machine-readable medium of claim 29, wherein at least one description element is
2 modified to add constraints to description elements.

1 35. The machine-readable medium of claim 29, wherein at least one depictor is modified to
2 resolve conflicts between depictors.

1 36. The machine-readable medium of claim 29, wherein at least one depictor is modified to
2 add constraints to depictors.

1 37. A method of generating a scene description from a set of words, comprising:
2 performing a linguistic analysis on the set of words to generate a structure representative

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